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GENERAL STAFF ACADEMY LECTURES: The Combat Employment of Rocket Troops and Artillery in an Offensive Operation of a Front and Army

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Summary:

The following report is a translation from Russian of a lecture, classified SECRET, prepared by General-Mayor of Artillery A. P. Suntsovyy and edited by General-Mayor of Artillery A. K. Gorlinskiy for presentation at the General Staff Academy of the Armed Forces of the USSR by the Department of Rocket Troops and Artillery. This lecture is a comprehensive presentation of prevailing views and principles regarding the employment of rocket troops and artillery in an offensive in a theater of military operations. The main points covered are bringing rocket troops to full combat readiness, organizing and using rocket troops in a front offensive and initial nuclear strike, and employing artillery in an operation. The lecture provides detail on the role and tasks of rocket troops and artillery in nuclear and conventional operations, their targets, centralization of operational planning, and various deployment and strike procedures.

End of Summary

Comment:

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Chief of the Academy
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S. P. Ivanov

26 February 1969

The Combat Employment of Rocket Troops and Artillery in an Offensive Operation of a Front and Army

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In this lecture will be set forth the following main matters defining our views on the combat employment of rocket troops and artillery in an offensive operation.

1. The bringing of rocket troops to full combat readiness.

2. The strength, grouping, tasks and main principles of the combat employment of rocket troops in an offensive operation of a front.

3. The employment of rocket troops in the initial nuclear strike of a front.

4. The combat employment of artillery in an operation.

In a future war, should the imperialists succeed in unleashing it, our Armed Forces may be faced with the necessity of conducting combat actions both with and without the employment of nuclear weapons. Therefore, in planning the combat employment of the rocket troops and artillery of the ground forces, several variants of the initiation of combat actions should be provided for.

Under the conditions of general nuclear war, the success of a front (army) offensive operation will be decisively affected by the actions of the strategic nuclear forces (primarily by the actions of the medium-range strategic rocket forces) to defeat the main grouping of enemy troops in the theater of military operations. The strikes of the strategic nuclear forces may not be delivered closer than a certain line, for the sake of the safety of our troops. This line may be 150 to 200 kilometers away from the forward units; only air nuclear bursts will be permissible near this line.

Targets in the depth (beyond this line), for the destruction of which the yields of operational-tactical missiles are sufficient, may be left for destruction by the means of the front. An enemy grouping immediately opposing the front is to be destroyed by front means, and primarily by its rocket troops. The rocket troops, from the very onset of a nuclear war, will perform the main tasks of defeating the opposing groupings of enemy troops; by so doing they will predetermine the success of front and army offensive operations.

But when a war is begun with the employment of only conventional means of destruction, the rocket troops are a potential means of defeating the enemy, ready to turn upon him with all of their might immediately upon going over to nuclear actions.

The role and importance of artillery will change depending on the nature of the beginning of the war and whether nuclear weapons are employed in it. Under some conditions artillery is the fire means supplementing missile/nuclear strikes within the limits of its range and fire capabilities, but in others it is the main fire power performing the main tasks of destroying the opposing enemy. In view of this we are devoting a great deal of attention to the qualitative and quantitative development of artillery.

1. BRINGING THE ROCKET TROOPS TO FULL COMBAT READINESS

The main means of destroying the enemy in the initial nuclear strike are the rocket troops, whose strike should be delivered at a time as close as possible to the strikes of the strategic nuclear forces in the theater of military operations, that is, the rocket troops must be ready to complete their tasks before the other front troops, in order to preempt the enemy in the employment of nuclear weapons, and deliver crushing strikes against him at the most opportune moment and with the greatest effectiveness. Therefore, the rocket troops are maintained in constant combat readiness in peacetime, that is, they are maintained in a status from which they may be allocated to participate in the initial nuclear strike without preliminary completion of mobilization.

For purposes of continuously maintaining the rocket troops in constant combat readiness, the chief of the rocket troops and artillery of the military district organizes, in accordance with the decision of the commander of the district (group of forces), the storage in the rocket troops of a certain number of missiles, warheads for them and missile propellant; he organizes, in advance, the selection of siting areas for the front missile large units (units) to be allocated to participate in the initial nuclear strike, organizes the topogeodetic preparation of these units, and also selects the routes to the siting areas and within them to be maintained in trafficable condition.

To reduce the time for bringing the rocket troops to full combat readiness in a period of threat (or aggravation of the international situation), they must be shifted to increased combat readiness, that is, to that status from which they may, in a shorter period of time, virtually from a state of constant combat readiness, occupy their siting areas (launching sites) and prepare to carry out their tasks according to the plan for the initial nuclear strike of the front.

When the rocket troops are brought to increased combat readiness, a number of measures are implemented which are aimed at increasing their combat readiness. The most important of these measures may be: fueling the delivery vehicles with missile propellant, preparing and delivering the missiles and warheads to the missile battalions, transferring the readied missiles to the launchers, detailing the necessary number of missile battalions from front and army missile brigades to assume combat alert status and moving them to temporary positions, moving the missile large units and units which are the farthest removed from the national border and which are allocated to participate in the initial nuclear strike, to the exercise areas (closer to the main siting areas), and preparing the rocket troop control posts in the front and armies for operation.

The highest state of combat readiness of the rocket troops is defined as their full combat readiness.

Full combat readiness of the rocket troops is that state in which the missile units are in their siting areas, have their combat task (according to the plan for the initial nuclear strike of the front), and are ready to carry out preplanned missile launches on signal.

The rocket troops may be brought to full combat readiness both from a state of increased combat readiness and directly from constant combat readiness. In the absence of a period of threat, the rocket troops are brought to full combat readiness, as a rule, from a state of constant combat readiness; this usually is begun by alerting them by combat alert signal and subsequently moving them directly to the main siting areas.

As the siting areas are occupied, topogeodetic preparation is monitored and engineer preparation of the battle formation of

the missile units and subunits is carried out, control is organized, and the launch batteries located at the main or launching sites are held at Readiness No. 3, 2, 2a, or 1, depending on the possible time of delivery of the strike.

In the event that the chief of the rocket troops and artillery of the front (army) knows the time of delivery of the initial nuclear strike, upon his orders the launch batteries to whom the coordinates of the targets to be hit are known, are shifted at that time to Readiness No. 1, and all the rest to Readiness No. 2 and 2a.

In order to reduce the time required to bring the rocket troops of the front to full combat readiness, the siting areas of the missile units may be assigned close to their permanent garrison areas (10 to 20 kilometers from them), with the condition that the missile units are capable of completing from these areas all the tasks of the initial nuclear strike planned for them.

The siting areas for the missile units and large units are assigned outside the disposition areas of the front troops, command posts and other important installations, and also on the side away from the possible direction of the enemy offensive. The army missile brigades must be positioned in the offensive zone of their own armies, and the missile battalions of the divisions in the zone of the impending offensive of their divisions. When a missile brigade is deployed close to its garrison points, 2.5 to three hours are required to bring it to full combat readiness from a state of increased combat readiness; when it is moving forward to siting areas prepared close to the national border, this requires eight to ten hours, depending on the length of the route of movement.

As the rocket troops of a front (army) are brought to full combat readiness under conditions in which the time of delivery of the initial nuclear strike has not been determined or when military actions are initiated without the employment of nuclear weapons, it is necessary to take steps to ensure that the rocket troops are maintained at a high level of readiness for immediate fulfilment of their tasks at any moment of the operation.

The main measures to ensure the rocket troops are maintained in readiness to fulfil the tasks of the initial nuclear strike of the front with a high degree of effectiveness under any conditions of the situation, will be:

-- systematic refinement of the planning of tasks for the rocket troops in the initial nuclear strike of the front;

-- continuous refinement of the coordinates of the targets to be hit;

-- maintenance of the organized control of the rocket troops in constant readiness;

-- centralization in the front of the planning and control of the relocation of the missile large units and units under front and army subordination, and in the armies -- the relocation of the separate missile battalions of the divisions with consideration for the tasks they are to carry out in the initial nuclear strike according to the plans of the armies and divisions. In this instance the schedule for relocating the missile large units and units subordinate to the front must provide for the constant readiness to strike of no less than two-thirds of the launch batteries, and by the time of most probable transition to nuclear warfare (breakthrough of the forward defensive line, repulse of an enemy counterattack, assault crossing of a major water obstacle, commitment of the second echelon of the front to the engagement, and so on) -- all these batteries must be ready;

-- timely increase of the levels of readiness of the launch batteries in accordance with the developing situation, and the implementation of measures to ensure the maximum possible number of these batteries participate in the initial nuclear strike of the front (during relocation all the launch batteries must be ready to deploy from the march in unprepared siting areas and participate in the initial nuclear strike of the front);

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-- systematic sounding of the atmosphere and delivery of meteorological bulletins to the missile subunits;

-- organization of rapid replacement of losses in personnel, missiles and launchers, replacement of defective missiles and missile equipment, and reinspection of missiles for expiration of the operating life of the instruments;

-- taking of steps to prevent unsanctioned missile launches.

2. STRENGTH, GROUPING, TASKS AND MAIN PRINCIPLES OF THE COMBAT EMPLOYMENT OF ROCKET TROOPS IN AN OFFENSIVE OPERATION OF A FRONT

The combat strength of the front rocket troops is established in peacetime to take into account the tasks the front is assigned, and accordingly its role and place in a strategic operation in the theater of military operations.

When the combat strength of the front is determined, the scale and areas of the employment of strategic nuclear forces in the front offensive zone also are taken into account, as are the categories of targets to be destroyed by them in the initial nuclear strike and during the operation. The fewer the installations of the main grouping of the enemy that are destroyed by strategic nuclear means, obviously the greater will be the requirement for the front rocket troops, other conditions being equal.

Also, when the combat strength of a front is decided, the anticipated condition and status, and the quantitative and qualitative strength of the opposing enemy grouping, are taken into consideration.

Under any situational conditions, the combat strength of the front rocket troops along with front aviation and the ground forces large units of the front, must ensure completing the destruction of the opposing enemy grouping after the strike of the strategic nuclear forces.

The combat strength of the front includes all the missile large units and units which organizationally form a part of the formations and large units, and also the missile large units subordinate to the front.

In each division there is one missile battalion (three launchers), and in each army there is an army missile brigade (nine launchers). A front missile brigade may have 12 launchers.

The number of missile launchers in a front has a direct bearing on the number of targets to be destroyed simultaneously. The side having many nuclear warheads, but an insufficient number of launchers, may prove to be in a highly disadvantageous position in relation to the side which, despite having fewer nuclear warheads, has a sufficient number of launchers to destroy a greater number of targets simultaneously.

The number of missile launchers is especially important to the conduct of the initial nuclear strike, since success will attend the side which employs the larger number of missiles against the maximum number of targets in the first salvo.

A front operating on an important axis of the theater of military operations, may have in its complement one or two front missile brigades (12 to 24 launchers), three to five army missile brigades (27 to 45 launchers) and up to 25 to 30 tactical missile battalions (75 to 90 launchers); a total of 114 to 159 launchers, including 39 to 69 operational-tactical launchers.

The missile large units and units are directly subordinate to the appropriate formation (large unit) commander, and are not included in any groups.

To supply the missile large units and units with missiles, a front may have:

-- one or two front mobile missile technical bases, which are to supply the missile units and large units subordinate to the front (including the reserve divisions of the front) with missiles, and to reinforce the army mobile missile technical bases;

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-- one or two missile transport battalions to transport the missiles and warheads to the mobile missile technical bases. In addition, in each army there is an army mobile missile technical base to supply the army missile brigade and missile battalions of the divisions with missiles.

When tactical and operational-tactical missile systems having different missile flight ranges and different nuclear warhead yields are present in the armament of the front missile troops, it is possible to destroy the enemy grouping opposing the front to a considerable depth of its disposition -- from the immediate tactical depth to 250 kilometers, and thereby destroy targets of different dimensions and nature, and virtually any targets of that grouping.

In an offensive operation of a front (army), the rocket troops can carry out the following tasks within the limits of the flight range of the missiles:

1. Destroy the enemy nuclear means of attack: subunits of guided missiles and free-flight rockets at their sites and in concentration areas, the tactical aviation delivery aircraft at airfields, field depots and supply points for nuclear warheads, artillery using nuclear ammunition, and control posts for the nuclear means of attack, in order to facilitate gaining and holding nuclear superiority over the enemy.

2. Defeat the main enemy troop groupings and operational reserves, significantly changing the balance of forces and means in our favor.

3. Disorganize the control of enemy troops by destroying command posts, major communications centers, electronic control posts, aviation control centers (guidance posts), etc.

4. Weaken the enemy air defense system on the axes of the actions of the front air army by destroying Hawk and Nike-Hercules surface-to-air missile batteries.

5. Disrupt the regular work of the operational and tactical rear, destroying offloading stations (materiel support airfields), various types of depots, military-industrial

installations, transportation centers and other important installations in the operational depth.

6. Contain the maneuvering of enemy troops by destroying bridges and crossings, and by creating zones of radioactive and chemical contamination of the terrain.

In a front offensive along a seacoast the rocket troops are capable, in cooperation with the forces and means of the navy, of defeating enemy naval strike groupings, amphibious landing forces and naval bases, and also of destroying the enemy on islands and in the coastal zone during a landing of front (naval) landing forces to assist the attacking troops.

The rocket troops of the front (army) perform the above tasks throughout the operation, taking into account the tasks being fulfilled by strategic nuclear forces in the front (army) offensive zone, and in close cooperation with front aviation and with artillery.

Basic principles of the employment of missile/nuclear weapons:

1. Missile/nuclear weapons must be used massively in order to carry out the main task of the operation. The strikes of the rocket troops in conjunction with aviation must inflict such damages on the enemy, as to break his resistance or result in drastic reduction of the combat effectiveness of the enemy troops. This is achieved by destroying targets with high accuracy and reliability.

On an average, the reliable destruction of targets requires:

-- to destroy a division in a concentration area, six to [missing] missiles of 100-kiloton yield each;

-- to destroy a guided missile launcher and aircraft at an airfield, one missile of 40 to 100-kiloton yield;

-- to destroy a large control post, one missile of 100-kiloton yield;

-- to destroy a battalion strong point, one missile of 100-kiloton yield or three missiles of 10 to 20 kilotons each.

2. The strikes of the rocket troops must be delivered with surprise and in a timely manner. This requires: active and continuous reconnaissance of the targets to be destroyed, maintenance of constant readiness of the rocket troops to deliver strikes, uninterrupted supply of the rocket units with missiles, timely decision-making on delivering the strike, transmission of tasks to the executors in the minimum amount of time, and timely monitoring of their readiness.

3. When planning missile/nuclear strikes and determining the tasks of the missile large units and units it is necessary to take into account the capabilities of each missile large unit (unit), the launching range of the missiles in service, and the yields of the nuclear warheads. We should not destroy with operational-tactical missiles those targets which may be destroyed no less effectively by tactical missiles.

Intelligent employment of rocket troops in accordance with the capabilities of each large unit (unit) allows them, in cooperation with aviation and artillery, to successfully carry out the main task of the operation to defeat and destroy the main grouping of the opposing enemy.

4. The strikes of the rocket troops must be planned in terms of time, targets and their locations, taking the strikes of the strategic nuclear forces and front aviation into account.

The successful employment of rocket troops in an operation largely depends on the front (army) commander's making a timely decision on the employment of nuclear weapons, and also on the actions of the front (army) staff, the chief of rocket troops and artillery and his staff, to carry out the decision adopted.

The decision of the front (army) commander is the basis for planning the combat employment of rocket troops in an operation, since in it are defined the specific targets to be destroyed by missile/nuclear strikes, the expenditure of missiles with nuclear warheads, their yield and the type of burst against each target, the expenditure of missiles with chemical warheads against

various targets, the time to deliver the strikes or the time required to achieve readiness, and the procedure for cooperation among the rocket troops, aviation, artillery and the attacking troops.

In order to make a sound decision on the employment of rocket troops, the commander may consult the chief of the rocket troops and artillery, who must always be ready to report on the following basic matters:

1. The strength of the rocket troops, their missile supply situation and capabilities for delivering strikes.

2. Possible targets to be destroyed by the rocket troops, taking the strikes of the strategic nuclear forces and aviation into account.

3. Possible times required to achieve the readiness of rocket troops and the measures necessary to support this.

4. The procedure for increasing the level of readiness of the rocket troops and for carrying out the initial nuclear strike.

5. Necessary measures for organizing the reconnaissance and final reconnaissance of the targets to be destroyed by missiles.

After the decision has been made by the commander, the chief of the rocket troops and artillery and his staff, in the course of joint work with the combined-arms staff, must:

-- refine for the rocket troops their specific targets in the initial nuclear strike and during the operation;

-- decide the procedure for delivering the initial nuclear strike, and for moving out, deploying and bringing the rocket troops to full combat readiness;

-- allocate nuclear and chemical warheads according to operational tasks and among the armies;

-- coordinate measures to organize reconnaissance (final reconnaissance) of the targets to be destroyed by missiles and to monitor the results of the strike;

-- coordinate matters of the organization of communications and the control of the rocket troops.

The planned matters of the combat employment of rocket troops in the operation are reflected in the plan for the combat employment of the rocket troops and artillery, which is a component part of the plan of the operation and the basic combat document of the staff of the rocket troops and artillery. This plan is worked up in a front on a 1:500,000 or 1:200,000 scale map (in an army on a 1:200,000 or 1:100,000 scale) with a short explanatory note.

After the plan for the combat employment of the rocket troops and artillery is approved by the commander, the chief and staff of the rocket troops and artillery implement a number of measures to prepare the rocket troops for the operation. The main measures are:

-- to organize missile supply to the missile units;

-- to select and prepare siting areas and the access routes to them;

-- to organize the moving out and deployment of rocket troops in the siting areas, and the bringing of the rocket troops to full combat readiness;

-- to organize the cooperation of the rocket troops with other means of destructon, with the attacking troops, and with airborne (or amphibious) landing forces;

-- to support the combat actions of the rocket troops and organize control.

3. THE EMPLOYMENT OF ROCKET TROOPS IN THE INITIAL NUCLEAR STRIKE OF A FRONT

The quick defeat of the opposing enemy grouping and, consequently, the outcome of the operation as well, depends on efficient organization and effective conduct of the initial nuclear strike.

The initial nuclear strike of the front is carried out by the rocket troops in conjunction with front aviation. However, the rocket troops have the deciding role in it, especially when the initial nuclear strike is delivered against the permanent garrison points of the enemy troops.

The deciding role of the rocket troops in the delivery of the initial nuclear strike is determined:

-- first, by their ability to deliver a strike to take the enemy by surprise;

-- second, by the reliability of delivery of nuclear warheads to target regardless of the status of the enemy air defense;

-- third, by the independence of the employment of rocket troops from the effect of meteorological conditions and time of day; missile/nuclear strikes may be delivered against the enemy in any weather conditions, including those in which air operations may be limited.

As a result of a skilfully conducted initial nuclear strike of the rocket troops in cooperation with aviation, a decisive change in the balance of forces may be achieved in our favor, the capabilities of the enemy to destroy front troops with nuclear weapons may be drastically reduced, the control of enemy troops considerably disorganized, and the air defense system and materiel-technical support of his troops will be disrupted.

As a result the troops of the front (army) will acquire an opportunity to initiate a rapid offensive on a wide front and to develop it at high speeds to a great depth.

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The staff of the military district (group of forces) does all the planning of the initial nuclear strike of the front in peacetime on the basis of the decision of the troop commander. The chief of the rocket troops and artillery participates in this planning in respect to the employment of the rocket troops. The planning of the initial nuclear strike is centralized at the front level because of the concentration of more complete reconnaissance data on the enemy in the front, and because the responsibility for the employment of nuclear weapons is one that only the front commander may assume. This ensures the most effective employment of nuclear weapons by all the means available to the front (including tactical missiles). An unauthorized launching of missiles with nuclear warheads cannot take place.

In the decision of the front commander on the employment of rocket troops in the initial nuclear strike usually are specified:

-- the strength of rocket troops allocated for the initial strike;

-- the expenditure of missiles with nuclear (chemical) warheads;

-- the specific targets to be destroyed;

-- the type of burst and yield of the nuclear warheads against each target or the required degree of destruction of the target;

-- the procedure and time frame for committing, deploying and bringing to full combat readiness the missile large units and units allocated for the initial strike;

-- the procedure for destroying moving targets (when moving targets are to be destroyed by army means, the aiming points are specified for the army rocket troops in the decision of the army commander);

-- the time to deliver the strikes, and signals to control the strikes.

For the tactical missile battalions allocated for the initial nuclear strike, the targets to be destroyed and the expenditure of missiles, or only the expenditure of missiles, may be specified by the decision of the front commander. In these instances nuclear strikes are planned for them by decision of the army commanders.

The destruction of the following targets may be planned for the rocket troops in the initial nuclear strike:

-- nuclear weapons delivery aircraft at airfields, cruise missiles and ballistic missiles at sites or in concentration areas, and also the posts and means for controlling them;

-- depots (storage and supply points) of nuclear weapons and missile propellant;

-- large control posts and centers;

-- the main groupings of enemy troops, especially tank troops, on the axes of the attacks of the front troops;

-- surface-to-air missile units (subunits) of the Nike-Hercules and Hawk types on the main axes of front aviation operations during the initial nuclear strike;

-- major rear installations (railroad junctions, bridges, ports, tunnels, naval bases).

The nature of the tasks assigned to the rocket troops in the initial nuclear strike are determined primarily by the tactical-technical characteristics of the missile systems: by the flight range of the missiles, the accuracy of the strikes, the yield of the nuclear warheads, the capability for delivering surprise strikes, and a high reliability of delivering a nuclear warhead to target.

The total number of tasks depends on the total combat capabilities of the missile units allocated for the initial nuclear strike (on the number of launchers, the distance of the targets to be destroyed from the siting areas and on the yield of the nuclear warheads).

On the basis of the decision of the front commander, the chief and staff of the rocket troops and artillery allocate the targets to be destroyed among the missile units, decide for each launch battery allocated for the initial nuclear strike the specific targets to be destroyed, the coordinates of the aiming points, the yield of the nuclear warhead, the type and altitude of burst, and also the procedure for delivering the strike, and, when destroying moving targets, the means of final reconnaissance of them as well.

The planning of the initial nuclear strike in the staff of the rocket troops and artillery of the front, is put into the format of a "schedule for preparing and delivering the initial nuclear strike by rocket troops of the front", approved by the front commander, and also is reflected in the plan for the combat employment of the rocket troops and artillery of the front. Excerpts are made from this schedule for each army and for each missile large unit (unit); these are sealed in envelopes and kept in the staffs of the armies and missile large units (units). At the same time there must be in these packets excerpts showing the route and procedure for moving out and deploying each missile subunit, the main and alternate launching sites for each battery, the grid angles of the bearings to aiming points, and the time required to achieve readiness for launch from the moment the commands and control signals are received. These packets are opened upon the signal for bringing the rocket troops to full combat readiness.

The chiefs and staffs of the rocket troops and artillery of the armies prepare the army rocket troops to participate in the initial nuclear strike of the front in strict accordance with the front plan.

The procedure for carrying out the initial nuclear strike of a front may vary depending on the situation which has developed:

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a) Delivery of a strike against enemy troops at their permanent garrison points, and against other stationary targets. The rocket troops fulfil the tasks of the initial nuclear strike by a strike to surprise the enemy -- one launching of missiles. The duration of the initial nuclear strike for the rocket troops under these conditions is determined only by the flight time of the missiles.

b) Delivery of a strike against preplanned targets under conditions in which the enemy troops have deployed. The tasks of the initial nuclear strike should be fulfilled in the following sequence: first the strike of the rocket troops against targets, the coordinates of which will be known by this time (as a rule these primarily will be stationary targets or those with low mobility). This sort of beginning of the initial nuclear strike also ensures its surprise, and consequently also greater effectiveness in destroying the targets, and, in addition, creates the most favorable conditions for the actions of our aviation, since the bulk of the surface-to-air missile batteries planned for destruction will be destroyed.

After the initial salvo (launch) of the rocket troops, final reconnaissance and destruction by missiles of the remaining targets of the initial nuclear strike are planned, as is a nuclear strike by the forces of front aviation. The destruction by rocket troops of targets requiring final reconnaissance is carried out, not all at once, but as final reconnaissance data are received.

The duration of the initial nuclear strike for the rocket troops under these conditions is determined by the time required to destroy all the preplanned targets (both stationary and moving). According to the experience of exercises, this duration was limited to one hour. But there can be no pattern to this. Sometimes it is desirable to deliver a nuclear strike by front means not immediately after the nuclear strike of the strategic rocket forces, but some time later, when the aftereffects of the nuclear strike of the strategic nuclear forces are clarified.

c) Also not ruled out is that variant in which not all participating launch batteries are brought to full combat readiness by the beginning of the initial nuclear strike. Under these conditions the missile subunits having the highest level of

readiness deliver strikes first, and the others as they are prepared for launch. The most important targets to be destroyed, first of all the enemy nuclear means of attack, have to be allocated for the launch batteries with the highest level of readiness.

In the event combat actions are begun without the employment of nuclear weapons, the planned initial nuclear strike of the front will be systematically refined, and its conduct will have a number of specific features engendered by a sudden change in the disposition of previously planned targets, by the appearance of new targets, changes in the grouping of rocket troops as a result of possible losses, the commitment of new large units to the engagement, and necessary relocations of the battle formations of the rocket troops.

Under these conditions, the planning and execution of the initial nuclear strike will not be completely centralized in the front. Some of the measures will be implemented in the armies and divisions.

The functions at the front level will include:

-- organizing reconnaissance and final reconnaissance of the targets;

-- determining the targets to be destroyed by the operational-tactical missiles;

-- determining the expenditure of nuclear warheads;

-- establishing the procedure for intensifying the levels of readiness and the times required to achieve readiness of the rocket troops for the strike;

-- planning the relocation of the operational-tactical missile large units and units (front and army missile brigades);

-- ordering the armies to employ tactical missiles in the initial nuclear strike.

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The functions at the army level will include:

-- organizing the reconnaissance and final reconnaissance of targets by army means;

-- ensuring the readiness of the missile brigade to fulfil tasks according to the front plan;

-- planning the allocation of the tactical missile battalions to the initial nuclear strike and organizing their relocation.

The functions at the division level will include:

-- organizing the reconnaissance and final reconnaissance of enemy targets by division means;

-- ensuring timely readiness of the missile battalion to perform tasks according to the army plan.

The staffs of the rocket troops and artillery at all levels are obligated to systematically monitor the readiness of subordinate rocket troop units and subunits.

To deliver an initial nuclear strike by the maximum number of launchers, the staffs of the rocket troops and artillery must constantly have available reliable data on the targets to be destroyed, and refine the tasks of each launch battery in a timely manner. The relocation of the missile units has to be carried out to allow for the constant readiness to strike of the maximum possible number of launchers; and when the front troops are carrying out the main tasks of the operation, such as breaking through prepared enemy defenses, making assault crossings of major water obstacles, repulsing the counterattacks of operational reserves -- to allow for the readiness of all missile units of the first echelon.

An exceptionally complex and crucial measure is increasing the level of combat readiness of the rocket troops to conduct the initial nuclear strike.

Premature and frequent shifting of the launch batteries to Readiness No. 1 is just as dangerous as delaying their shifting to this readiness. Miscalculations can delay delivery of the strike, and in certain conditions can also result in failure to complete the tasks.

With proper organization of reconnaissance (final reconnaissance) of the targets to be destroyed and timely preparation of the launch batteries, the rocket troops can carry out the initial nuclear strike almost simultaneously with one launching by all the launch batteries planned for participation in the initial nuclear strike.

4. THE COMBAT EMPLOYMENT OF ARTILLERY IN AN OPERATION

In an offensive operation conducted with the employment of nuclear weapons, it is no longer necessary to deal, on a front scale, with the problems of establishing large groupings and organizing artillery fire to break in the enemy defense on the axis of main attack, as occurred during the past war.

Under these conditions the role of artillery consists of providing fire support to the troops attacking immediately after nuclear strikes, and the functions of organizing its combat employment basically have passed to the army and division.

However, under the conditions of the employment of nuclear weapons, the role of artillery in achieving the objectives of an offensive operation of a front (army) also remains quite significant. Since nuclear weapons are not employed uniformly along the entire front of an offensive, but primarily on the main axes, the degree of damage to the enemy by nuclear weapons on different axes will be unequal.

On those axes where nuclear weapons are not employed, or are employed on a limited scale, the volume of artillery tasks will be considerable and, consequently, its role will be more essential.

In view of the impossibility of destroying all enemy targets with nuclear strikes, especially near our own troops, it becomes very important for artillery to fulfil those tasks within its range, such as combating tactical nuclear means of attack and

artillery, destroying tanks and armored vehicles, destroying and neutralizing antitank means, personnel and their fire means, and neutralizing the control posts and radioelectronic means of the enemy.

Artillery is a means of close support of attacking troops.

In an operation beginning without the employment of nuclear weapons, the essential condition of success is to gain fire superiority on the field of engagement. This requires establishing superiority in fire means, primarily in artillery and aviation, as artillery will play the main role in performing this task in the tactical depth.

The essence of gaining fire superiority is to destroy and neutralize enemy fire means, primarily those which may directly affect the attacking tanks and motorized infantry, with the condition of preserving our own fire means.

This means that, before attacking the enemy with our tanks and motorized infantry, we have to destroy or neutralize enemy nuclear means, field and antiaircraft artillery, infantry antitank means, and tanks, and to disorganize the control of enemy troops -- also his control posts.

Artillery is the most successful at fulfilling these tasks in the tactical depth. Its role in achieving fire superiority is exceptionally great. In modern operations, conducted without the employment of nuclear weapons, artillery becomes the main fire power of the ground forces, and artillery fire assumes a factor of operational significance in achieving the objectives of an offensive operation.

The nature of artillery tasks is considerably different from that of its tasks in the past war. A new major task has appeared -- to destroy enemy tactical nuclear means. The nature of most targets, which have become highly mobile and armored, has undergone changes, and modern engineer equipment is conducive to rapid and more reliable preparation of lines of defense. All this makes increased demands on artillery. The following should be included among the main tasks of artillery:

1. To destroy enemy tactical nuclear means of attack.

2. To support the movement forward and deployment of large units of the first echelon of the army and their organized surmounting of the resistance of enemy covering units.

3. To destroy the opposing large units of the enemy first echelon when breaking through defensive lines by conducting preparatory fire and fire support of the attacking troops to the entire depth of their combat task.

4. To repel counterattacks and counterthrusts, and interdict the movement of enemy forces and means.

5. To support the assault crossing of water obstacles by the troops.

6. To support the commitment of second echelons to the engagement, and also create the conditions for successful actions of tactical airborne landing forces.

Artillery fulfils its tasks by destroying and neutralizing enemy nuclear means of attack, his artillery and tanks, personnel, fire and radioelectronic means, control posts and installations of the tactical rear.

In an operation beginning without the employment of nuclear weapons, the basic principles of the combat employment of artillery will be: massing of artillery on the most important axes, close cooperation of artillery with the attacking troops and with supporting aviation, and continuity of fire support of the attacking troops throughout the operation.

Artillery usually is massed on the axes of the main attack when breaking through the enemy defense, where 60 to 70 percent of the total artillery complement of the armies must be concentrated. This massing is carried out secretly and in a short time. After fulfilling its tasks, artillery has to disperse quickly to prevent its being destroyed by a possible enemy nuclear strike.

The specific features of the combat employment of artillery under these conditions include:

-- a considerable increase in the volume of tasks performed by artillery, which results in the need for a great reinforcement of the armies with artillery;

-- the conduct of heavy preparatory fire to break through the enemy defense -- in a number of instances this requires allocating artillery from the second echelons of the armies, and sometimes even from the front, to participate in the preparatory fire.

-- the necessity of reliable destruction of all targets with conventional ammunition, which results in a considerable increase in ammunition expenditure.

The front and army requirement for artillery

The artillery requirement of a front is determined on the basis of the tasks assigned to the front in the operation, and on the strength and possible nature of the actions of the enemy grouping opposing the front. This requirement is composed basically of the requirements of the armies making up the front and, when breaking through the strongest defensive line in the offensive zone of each army, also of the artillery needed to carry out the tasks of the front, for example such as establishing antitank reserves, supporting combat with airborne landing forces, and others.

The army artillery requirement depends on the tasks of the army and the concept of the operation, the grouping of enemy troops in its offensive zone and the width of the breakthrough sector, on the number of targets subject to simultaneous neutralization by artillery fire, and also on the level of aviation participation in preparatory fire.

The strongest enemy defense should be anticipated on the forward defensive line, where his main forces may be positioned, and where there will be full engineer preparation of the positions and a high density of all types of fire, including antitank fire. The calculated requirement for artillery to break through the forward defensive line also will be sufficient to carry out other tasks, including operations conducted with the employment of nuclear weapons.

To calculate the artillery requirement of each army of the first echelon of the front, the expected strength of the grouping of enemy troops in its offensive zone, the probable enemy lines of defense and the possible width of the defensive zones of the large units of the first echelon, are determined. Then the approximate number of targets in the breakthrough sector and on adjoining flanks to be destroyed simultaneously by artillery fire is computed, taking into account the desirable density of neutralization, and, using the average norms of the artillery requirement for neutralizing standard targets, the total artillery requirement is determined. By subtracting from the total artillery requirement the organic strength that can be allocated to fulfil the calculated tasks, the artillery reinforcement requirement of each army of the first echelon of the front and of the front as a whole, is determined.

A front, which will have three or four armies operating in its first echelon, may require two to three artillery divisions of the Reserve of the Supreme High Command, and an army -- up to one artillery division of the Reserve of the Supreme High Command. In addition, to establish the antitank reserves of the front and armies there may be required two to three tank-destroyer artillery brigades of the Reserve of the Supreme High Command. The front antitank reserve may be made up of one or two tank-destroyer artillery brigades, which will make it possible to reinforce, during the operation, one or two armies within limits ensuring restoration of their antitank reserves, or when necessary, to reliably cover probable axes of tank threat in a 15 to 30-kilometer zone and, in cooperation with the reserve large units of the armies of the first echelon, repel the attack of one or two enemy armored (tank) divisions. Reinforcing the armies of the first echelon, which are attacking on the probable axes of tank threat, may require up to one tank-destroyer artillery brigade.

The artillery requirement of an army of the second echelon of the front does not affect the overall front requirement, since this army is reinforced during the operation, when it is committed to the engagement, by drawing upon the artillery of the Reserve of the Supreme High Command previously attached to the armies of the first echelon.

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The allocation and grouping of artillery

The allocation of the artillery of the Reserve of the Supreme High Command among the armies of the first echelon is made in accordance with the decision of the front commander on the operation, on the basis of the calculated requirements of each of them. In this instance, it is necessary to devote special attention to reinforcing the tank army of the first echelon with long-range artillery to combat enemy tactical nuclear means and artillery (since there is no army artillery in a tank army). The allocation of artillery within the armies is made in a similar manner among divisions of the first echelon, leaving part of the long-range artillery to establish an army artillery group (divisions attacking on the main axis may be reinforced by four to six artillery battalions). When the tank-destroyer large units coming to reinforce the front are allocated among the armies, the tasks to be fulfilled by the armies, the conditions in which operations will be conducted by them, the possible strength of the enemy tank groupings expected in the zone of each army, and the expected degree of destruction of them by aviation, are taken into consideration.

Changes in the initial allocation of artillery are possible during the operation, since a transfer of the main efforts of the front to a new axis is not ruled out, nor is a change in the enemy forces and means and nature of operations. Reallocation of the artillery of the Reserve of the Supreme High Command among the armies may also be the consequence of an unevenness of artillery losses in the armies and the need to reinforce an army of the first echelon when it is committed to the engagement. A change in the initial allocation of artillery in a front may be made by resubordinating artillery large units and units or by reinforcing the armies by drawing upon the antitank reserve of the front and, in addition, the artillery large units of the Reserve of the Supreme High Command received by the front during the operation.

The following grouping of artillery is established from the artillery which is organic or attached to the army (division):

In an army there may be established an army artillery group composed of four or more long-range artillery battalions. This will allow the army commander, by maneuvering fire, to actively

influence the course of the battle of the divisions attacking on the main axis. The role of the army artillery group is considerably increased during a breakthrough of the enemy defense by the adjacent flanks of the first-echelon divisions when centralization of combat with enemy tactical nuclear means and artillery is required throughout the breakthrough zone and on the flanks, during the repulse of an enemy counterattack, during the commitment of divisions of the second echelon of the army to the engagement, and during the fulfilment of army-level tasks.

For purposes of greater flexibility of control and better cooperation with the attacking troops, an army artillery group may be subdivided into sub-groups (usually two) according to the number of first-echelon divisions operating on the axis of main attack. During an operation, when it will be undesirable to have an army artillery group, the artillery of the sub-groups of the army artillery group may be resubordinated to the divisions in whose zone it is operating, or to divisions newly committed to the engagement. In a first-echelon division attacking on the main axis, there is established a divisional artillery group composed of three or four artillery battalions, and in a regiment there may be a regimental artillery group composed of two or three artillery battalions. In addition, the grouping of artillery includes the antitank reserves (from regiment to front, inclusive), established by drawing upon antitank artillery, antitank guided missiles and tanks.

The movement forward and deployment of artillery

The procedure for moving forward and deploying artillery is determined largely by the method by which the troops go over to the offensive.

The most complex conditions for moving the artillery forward will be when troops go over to the offensive against an enemy defending a forward line when there is a covering zone. The artillery must be moved forward so that it is deployed in front of the forward defensive line in a timely manner and ready to disrupt possible enemy counterpreparation fire and to conduct preparatory fire.

First the artillery of the forward detachments and advance guard is moved up to the forward defensive line and deployed in

battle formation. The artillery is followed by the artillery reconnaissance subunits of division and army subordination.

The artillery groups of the first-echelon regiments move at the head of the columns of their regiments. The divisional artillery groups and antitank reserves of the divisions should be moved along separate routes at the same time as the first-echelon regiments are moved. The army artillery groups are moved at the same time as the main forces of the first-echelon divisions operating on the main axis of the armies.

The antitank reserves of the armies should be relocated behind the first-echelon large units on the axes of probable tank threat, where counterattacks by enemy armored troops are anticipated.

The movement forward of the artillery units of the Reserve of the Supreme High Command which are being resubordinated to the armies, must be planned in detail by the chief of the rocket troops and artillery of the front. These units should be moved forward to the offensive zones of the armies and resubordinated in areas as close as possible to the concentration areas (waiting areas) of the first-echelon divisions. After that they operate in accordance with the orders of the division commanders and chiefs of the rocket troops and artillery of the divisions.

The antitank reserve of the front must be moved forward to a deployment area on one of the threatened axes and prepared to occupy firing lines.

Some of the artillery may be moved with the forward detachments to cover the perimeter and assume battle formations.

To deploy artillery, conduct reconnaissance, refine planning and assign tasks, as experience gained in exercises has shown, a division requires two to three hours, and to organize a breakthrough of the forward defensive line on the axis of main attack of the army -- four to six hours, of which at least two to three hours are in daylight.

Preparatory fire and fire support

Preparatory fire and fire support have to be carried out, as a rule, to break through the forward defensive line, which will be occupied by the main forces of the enemy first echelon, and during an operation -- to break through intermediate enemy lines of defense.

Preparatory fire and fire support usually are planned in the armies and divisions. The staff of the rocket troops and artillery of the front decides the artillery grouping, and calculates the artillery and ammunition required to break through defensive lines on the most important offensive axes of the armies. In accordance with this the staff allocates reinforcing artillery among the armies and decides the procedure for allocating the artillery of the army of the front's first echelon to preparatory fire, and also establishes the expenditure of ammunition for each army and ensures it is delivered on time.

In instances when fire planning is done in the divisions (the divisions are attacking on various axes), the chief of the rocket troops and artillery of the army, according to the decision of the army commander, has to determine and indicate for the divisions: the permissible expenditure of ammunition on preparatory fire; the strength of artillery allocated from the second echelon to preparatory fire and fire support in the offensive zones of the divisions; the tasks to be performed by army means in support of the divisions.

If a breakthrough of an enemy defense is made by the adjacent flanks of the divisions on the axis of main attack of the army, it is desirable to conduct preparatory fire according to a unified plan worked out by the staff of the rocket troops and artillery of the army. In this instance, when planning preparatory fire and fire support, the staff of the rocket troops and artillery of the army must determine the volume of tasks to be performed by artillery in simultaneous destruction of enemy targets; the amount of artillery to be allocated to preparatory fire and its fire capabilities; the density of destruction of targets which vary in nature and disposition; the ammunition to be expended by the allocated artillery; the duration and organization of preparatory fire; the measures for disrupting possible enemy counterpreparation fire; the method and depth of

fire support; the tasks of the army artillery group and the organization of the control of artillery.

The task of preparatory fire is to inflict such losses on the enemy that he would be deprived of the opportunity to offer resistance, and the fighting spirit of his troops would be broken.

The duration of preparatory fire depends on many factors, including the method by which the troops go over to the offensive.

When troops go over to the offensive from direct contact with the enemy, the duration of preparatory fire is determined by the time required to carry out all fire tasks with the expenditure by the artillery of the allocated amount of ammunition in accordance with the method of fire.

When going over to the offensive from the march the duration of preparatory fire is determined, among other factors, also by the time required to cover with artillery fire the movement forward and deployment in battle formation of the first echelons of the attacking divisions.

The organization of preparatory fire must ensure the most desirable use of all means to inflict maximum losses on the enemy, including the conduct of fire from direct-aiming guns and antitank guided missiles. Usually preparatory fire is planned to include one to three or more artillery strikes of different durations, calculated so that the ammunition expended against the main targets is the amount required to destroy them. The first artillery strike must be sudden and powerful. It must include the destruction of first-line enemy nuclear means of attack, artillery and mortar batteries and strong points. The next artillery strike should be delivered against the targets of the attack and against unneutralized enemy artillery and mortar batteries. In this instance the artillery strike against enemy batteries must overlap the beginning of the fire support of the offensive. Newly detected enemy tactical nuclear means of attack must be destroyed first.

When planning preparatory fire it is necessary to provide for artillery actions to disrupt possible enemy

counterpreparation fire.

When organizing fire support, the staff of the rocket troops and artillery of the army, in accordance with the decision of the army commander, determines: the method and depth of fire support; the time of the beginning of fire support in relation to "H-hour"; the amount of artillery from the second echelon and the army artillery group to be allocated to fire support; the tasks of artillery to repel enemy counterattacks and counterthrusts; the procedure for negotiating intermediate lines of defense, securing the boundaries between divisions and the flanks of the army, preventing the approach of enemy reserves, and consolidating captured lines; and the expenditure of ammunition.

The method of fire support is determined on the basis of the nature of the enemy defense, the availability of the necessary reconnaissance data on this defense, the strength of artillery assigned to fire support, and the amount of ammunition allocated.

Under conditions in which the enemy defense comprises a system of strong points which are not connected by trenches, fire support most often is carried out by successive concentration of fire to the depth of the battalion defensive areas of the first echelon of the enemy, and further -- by neutralizing and destroying the enemy by concentrated fire, and by the fire of guns, platoons and batteries against individual targets.

If continuous trenches are prepared in the enemy system of defense and the attacker has a sufficient amount of artillery and ammunition, then barrage fire may also be used in fire support.

XXX Even now, artillery, having chemical ammunition in service, is capable of doing considerable damage to the enemy, which brings it close to the category of means of mass destruction.

Along with the increase in artillery fire power, a considerable increase in its maneuverability and its degree of protection against the effects of nuclear strikes and the fire of conventional means of the enemy, can be anticipated.

All this will increase artillery's capability to defeat the enemy and heighten its role in achieving the goals of an operation.

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The continuous process of developing and improving the armament of the rocket troops is directed toward increasing the flight range and yield of the nuclear warheads of the missiles, toward increasing the accuracy of strikes and reducing the time spent on preparing missile launches, and toward increasing the maneuverability and the capabilities for protection against enemy nuclear strikes and conventional fire. All this will increase even more the capabilities of the rocket troops to deliver sudden, powerful and accurate strikes against the enemy under various conditions of the initiation and development of an offensive operation.

In conclusion, it must be noted that in this lecture are set forth only the main matters of the combat employment of the rocket troops and artillery of the front and army. Other matters, such, for example, as the organization of control of the rocket troops and artillery, the supplying of missiles to the rocket troops, topogeodetic preparation, meteorological support and other types of support will have to be studied independently, using the textbook of this department.

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